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# 360° MECH

The Navy and Marine Corps Aviation Maintenance Safety Magazine



*Approach Online*



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## The Navy & Marine Corps Aviation Safety Magazine

2017 Volume 1, No. 2

**RDML Christopher J. Murray, Commander, Naval Safety Center**  
**CAPT John Sipes, Deputy Commander**  
**CMDCM(SW/AW/IW) James Stuart, Command Master Chief**  
**Maggie Menzies, Department Head, Media and Public Affairs**  
**Naval Safety Center (757) 444-3520 (DSN 564)**  
**Publications Fax (757) 444-6791**  
**Report a Mishap (757) 444-2929 (DSN 564)**

### MECH Staff

**Nika Glover, Editor** nika.glover@navy.mil Ext. 7257

### Aviation Safety Programs Editorial Board

**CDR Robert Beaton, Division Head** robert.e.beaton@navy.mil Ext. 7265  
**CWO3 Charles Clay, Branch Head** charles.clay@navy.mil Ext. 7258  
**GySgt Ernesto DelGadillo** ernesto.delgadillo@navy.mil Ext. 7239

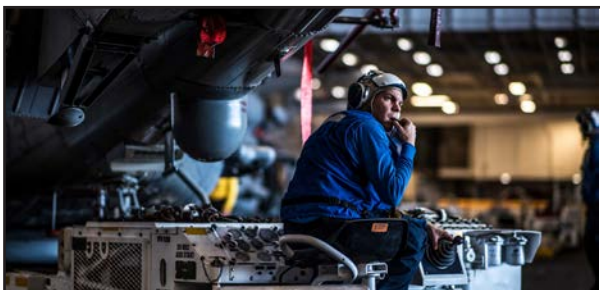
### All Analyst

safe-code11@navy.mil Ext. 7811

Mishaps cost time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness. This magazine's goal is to help make sure that personnel can devote their time and energy to the mission. We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous; the time to learn to do a job right is before combat starts. *Approach* (ISSN 1094-0405) is published bimonthly by Commander, Naval Safety Center, 375 A Street Norfolk, VA 23511-4399, and is an authorized publication for members of the Department of Defense. Contents are not necessarily the official views of, or endorsed by, the U.S. Government, the Department of Defense, or the U.S. Navy. Photos and artwork are representative and do not necessarily show the people or equipment discussed. We reserve the right to edit all manuscripts. Reference to commercial products does not imply Navy endorsement. Unless otherwise stated, material in this magazine may be reprinted without permission; please credit the magazine and author. Send article submissions, distribution requests, comments or questions via email to: SAFE-Approach@navy.mil and SAFE-Mech@navy.mil

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On the cover:

Aviation Boatswain's Mate (Handling) Airman Matthew Kuhns uses a tractor to relocate an MH-60R Sea Hawk helicopter assigned to the "Battlecats" of Helicopter Maritime Strike Squadron (HSM) 73 in the hangar bay of the aircraft carrier USS Theodore Roosevelt (CVN 71). (Photo by Mass Communication Specialist Seaman Bill Sanders)

CONNECT WITH US





# Crunch in the Junkyard

BY PO2 CLIFFORD LONESOME, VFA-195

A fellow aviation ordnanceman (AO) and I were preparing our aircraft for the day's flight schedule during the command's fall Western Pacific patrol onboard USS Ronald Regan (CVN 76). The flight deck coordinator (FDC) called over the radio for us to reposition an MHU-191 ordnance skid in the support equipment holding area of the flight deck, an area commonly referred to as the junkyard. The ordnance skid we were moving carried four bomb rack unit (BRU-41) improved multiple ejector racks (IMERs), used to carry practice bombs on the F/A-18. The skid was located in the junkyard next to an MH-60R helicopter, lined up port-to-starboard on the ship instead of the standard parking orientation of forward-to-aft. Our job was to move the skid to a position where it was resting in the proper forward-to-aft alignment.

As the name implies, the junkyard is extremely crowded with support equipment, complicating our task. We decided to move the skid to a small space between the front of the helicopter and an aircraft external fuel tank dolly that was located closely beside it. As we worked to reposition the skid, my fellow AO guided the aft portion of the skid while I pushed against one of the IMERs to keep it from hitting the helicopter. After starting the move, we realized the skid would not fit into the narrow space available with the IMERs still on it. At this point, we were about halfway done with the move and I left for the work center to get additional AOs to help remove the IMERs from the skid.

While I was gone, the PO3 assisting me noticed some scratches on an antenna on the forward portion of the helicopter. As she was trying to determine if we caused the damage, the FDC from the helicopter squadron came over and took a look as well. He confirmed that the scratches were not previ-

ously there and that the damage must have been caused while moving the ordnance skid. As I returned to the flight deck, I was told to immediately contact our FDC. The maintenance departments of both squadrons were notified and our quality assurance shop began an investigation. At this point, the realization that the IMER had scratched an antenna on the helicopter began to set in, turning what should have been a routine move into a potential mishap.

Due to the sensitivity of damaging an airborne sensor, the helicopter squadron could not determine if the scratched antenna would need to be replaced until the aircraft flew and the antenna could be evaluated. Fortunately, the following day the helicopter did fly and the antenna checked good airborne, requiring only cosmetic repair despite the damage. This time, luck was on our side, but the whole event could have been avoided through better operational risk management of the move evolution.

This crunch taught me some valuable lessons. My fellow AO and I thought this would be a routine move of our support equipment in the junkyard. However, nothing we do on the flight deck should ever become routine. I did not properly assess the risks involved, especially since the skid was parked so closed to an aircraft. Had we taken a few extra minutes prior to rushing into the task, we could have gathered help from the work center and removed the IMERs from the skid prior to executing the move. As we gain experience operating on the flight deck, it is easy to develop a false sense of proficiency and comfort. This near-miss taught me the consequences of complacency when operating in such a dynamic and dangerous environment, and how to avoid them in the future.





An aviation ordnanceman uses a skid to transport munitions to an aircraft.  
(Photo by Mass Communication  
Specialist 2nd Class James R. Evans)

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# Look Out Below!

BY LTJG WESTON HENDERSON, VP-45

**T**he P-8A Poseidon is not your typical Boeing 737 aircraft. The unique mission of the P-8A requires unconventional maintenance that is still relatively new to the community. The P-8A has multiple antennas, mission equipment, and sensors installed on the outside of the aircraft. This sensitive mission equipment must be flawlessly maintained in order to keep the aircraft fully mission capable. Late one morning, the aircraft division sent an experienced maintenance team to the aircraft to conduct a routine replacement of the inmarsat radome.

The inmarsat radome is located at the top of the vertical stabilizer, which is 43 feet above the ground. In order to accomplish this task, the maintenance team must use a Genie man-lift to reach the inmarsat radome. The Genie man-lift comes with a cart that has weight restrictions. With these weight restrictions, the individual maintainer cannot bring an entire tool kit.

The maintainer must bring the required tools loosely on the floor of the cart. When operating the Genie man-lift, the movement of the cart up and down tends to create jolting and unstable movements for the rider and the tools. These unstable movements are a known hazard and risk accepted for personnel operating this particular man-lift. Five months into deployment, these seasoned maintainers have learned

to operate this machine with attentiveness and caution. As the rider moved cautiously downward, the jolting of the cart caused a tilted unstable platform.

This abrupt motion caused a speed handle to fall off the cart. The speed handle fell downward and struck the tail cone causing minor superficial damage to the skin of the aircraft. Although the damage to the aircraft was minor, the potential for greater damage or injury to maintenance personnel was substantial.

The inherent risks and dangers of flying, operating, and maintaining naval aircraft will continue to be a significant factor in mishaps. We must continue to monitor these risks and continue to implement controls to maintain safety and mission effectiveness. At a glance, the simple idea of a man-lift that provides an unstable cart movement does not seem to be the likely cause of a mishap.

This event proves that there are hidden and unknown dangers everywhere in our work environment. These types of hazards can cause problems for the most experienced and qualified maintainers in the U.S. Navy. Operational risk management, NATOPS, SOPs, quality assurance and the command's safety department must stress the importance of identifying risk and hazards that can lead to the prevention of damage to equipment and injury to personnel.



# Do It Right or Don't Do It At All

BY AE2 THOMAS BESA

Someone once told me, “Doing it wrong is as good as not doing it at all.” Right off the bat that message is what you should get out of this story, as it is a very important lesson we must all learn from, regardless of rating or rank. On a rainy Tuesday morning, my fellow ordnancemen and I were on the flight line preparing the aircraft for daily flight operations. I was the collateral duty inspector (CDI) in charge of overseeing the installation and torquing of 16 ALE-47 magazine dispenser buckets on four F/A-18E Super Hornets. I had all the required tools, but I did not have the actual checklist in my hands.

Over time, I got so relaxed with the repetitiveness of this specific job that I missed a very important step. I should have read the checklist step-by-step, without rushing. Even though I thought I had verified the torque on all the buckets in an x-pattern, in accordance with A1-F18EA-LWS-000, I obviously missed something. The aircraft returned from its flight and during the turnaround of the aircraft another ordnanceman found one of the four ALE-47 magazine dispenser buckets missing from the aircraft. The bucket had fallen off in flight! The aircraft had flown over residential areas where kids were at school and where people were in their homes. It could

have been catastrophic if it had hit and destroyed someone's property or, even worse, if it had hit someone as this surely would have resulted in a fatality. Luckily, this did not result in any property damage or personal injury; however, this incident was entirely avoidable had I done by-the-book maintenance. All of this was a result of my negligence to do the job by the book.

Proper procedures and instructions are established by experts for all of us to follow. Mishaps have happened in the past because maintainers have not followed simple instructions, and it has resulted in the damage of personal property and/or injury; and even worse, death. They are easy to read and simple to use, so there should be no reason to not follow the specific steps as written in the publications and checklists.

CDIs are the people in the work center that the command trusts to oversee that the job gets done properly, but, more importantly, we are the people that the junior Sailors look up to. They seek guidance and knowledge from us, and are relying on us to do it right ourselves and to train them if they are not doing the job correctly. They are our replacements and the future of our Navy. What kind of future are we providing if we don't teach them to do the right things now? Equally as important, how can we as CDIs and supervisors keep our Sailors safe and the jets flying safely if we are not following the book at all times, on and off the flightline? The term “by-the-book maintenance” is something we've all heard hundreds of times that can sometimes go in one ear and out the other. Please use this incident as a reminder of what can happen if we choose to not take that to heart by letting that phrase fully sink in.



Aviation Electronics Technician 1st Class Jeffrey Caleb, right, and Aviation Electronics Technician 3rd Class Adam Chenevert conduct an ALE-47 airborne countermeasure dispensing system inspection during routine pre-flight checks on an F/A-18F Super Hornet. (Photo by Mass Communication Specialist 2nd Class Kilho Park)

# The Tale of Two Beanies

BY AE2 CHRISTOPHER HILL, HSM-74

During month three of a seven-month deployment, day-to-day maintenance and flying had the days running together. August 21 was a day, however, I will never forget. Vixen 703 had a 1:45 a.m. launch in support of Operation Inherent Resolve and it was maintenance's job to give the pilots the best helicopter possible on time. It was 11:30 p.m. and we had finished pulling the bird out to the maintenance line to spread. We unfolded the tail and performed the blade spread as we always had. The only difference was the black blade lockpin was engaging and retracting continuously and all the pitch lockpins were still engaged. The blade lockpins drive in to ensure the blade is locked and the pitch lockpins drive out to allow the blades to make pitch adjustments. The system is meant to ensure the integrity of the rotor system prior to and in flight.

As a proud naval aviation maintainer, I know the importance of meeting the flight schedule. I grabbed an IETMS and a toolbox, and with a great sense of urgency, sprang into action. Looking at the time, I knew that I would have to act expeditiously. Flight quarters would be set at 1:15 a.m. and somehow it was midnight already. I would have to push myself more than usual to meet the mission. Luckily, shift change was going on simultaneously so my counterparts were there to lend assistance. We feverishly began to troubleshoot and step after step, produced no results. We spent over an hour and a half making minor progress just to come up short every time. Launch time had come and gone; and now, the pilots were scratching their heads and asking questions. With the flight schedule in jeopardy, maintenance control made the call to go to the spare. This is not what a maintainer wants to hear.

During most days, this call would have been simple enough, and would have only taken an hour. It just happened this was not most days. The hangar door for our second aircraft was broken and the rapid securing device (RSD) had a nitrogen leak. This door required three shop technicians and took 30 minutes to open. We would have to charge the RSD system to traverse, which can further delay launch. Additionally, we would still have to find a way to fold 703 and get it off deck. As the rest of the crew began to prep 710 for flight, they discovered the rotor head accumulator required servicing. It was clear

that the night was rapidly turning into the worst-case scenario two down aircraft and a busted flight schedule.

Feeling the pressure of everything that was going on, I told maintenance it would be faster to remove the main rotor de-ice distributor (aka beanie) from 710 and temporarily use it on 703 while troubleshooting continued on the door. I was given the go-ahead, and after installing the distributor, 703's black blade lockpins worked, pitch locks retracted, and the problem was fixed! The crew stopped working on 710 and began the process of closing the door, and finishing 703's preflight checks for the flight schedule. I got down off the helicopter with the part in hand, gathered my tools for a proper "All tools accounted for, and was on my way to turn the repairable part into supply. Finally, at 2:50 a.m., flight quarters were set and the crew conducted a preflight of the head and launched at 3:30 a.m.

Now this sounds like a story of great perseverance by the book maintenance in the face of adversity. Not so. Let us now





talk about how this impressive maintenance feat took a turn for the worst into a maintenance catastrophe. While on my way to turn in the beanie I had limited space to get in the hangar. I could not go through the hangar door, as they were still attempting to close it, so the only option was the hatch next to it. The ship's technicians were working on closing the hangar door allowing me a sliver of room to sneak by. The tools filled my hands, so instinctively and foolishly, I set the beanie down on a ready service locker outside of the hangar bay hatch. This locker just so happened to be by the side of the ship. After going in and out of the hangar a few times, I realized the beanie was missing from my inventory. Once it hit me where I thought I had left it, the search began. After 12 long hours with no distributor to be found, it was concluded the part fell over the side, off the ship, and down to Davey Jones' locker. Only later did I find out this part cost approximately \$100,000.

So what did I learn through this ordeal? First, sometimes

during a high-stress evolution, it is important to take a moment to gather and regroup. Consider the operational risk management of the situation. Perceived pressure can cause you to make mistakes and skip critical steps jeopardizing the safety of the aircraft and crew. If the flight schedule does not happen on time every time, it is acceptable. Rushing procedures and not properly stowing gear is not. It has the potential to waste money and cost lives. Additionally, you must ask yourself, what is different today? We had the hangar, the RSD, and several parts of two aircraft requiring maintenance all at the same time. Next time, I will recognize this as a high-risk evolution and help my shipmates understand the potential risks. If the flight schedule starts 10 minutes late because we did procedures properly, I will be able to sleep just fine. When your adrenaline is going, it is easy to lose sight of the situation and make a careless mistake. Beware the tale of the two beanies!



Seaman Joseph Kelley conducts maintenance on the tail rotor of an MH-60S Sea Hawk helicopter (U.S. Navy photo by Seaman Christopher A. Michaels)



# Bravo Zulu

Sailors and Marines  
Preventing Mishaps

## AN CHANDLER REYNOLDS

While on board the USS Ronald Regan (CVN 76), AN Chandler Reynolds went beyond his normal job responsibilities while serving as the brake rider for Liberty 603 during an aircraft move on the flight deck. During the aircraft move evolution, the towbar separated from the aircraft which left 603 free-rolling towards an F/A-18E Super Hornet and various avionics pods positioned nearby. AN Reynolds quickly reacted by relying on his training, applying the brakes and setting the emergency parking brake, which prevented potential loss or damage to the aircraft and injury to the personnel involved with the move. AN Reynolds' attention to detail, initiative and dedication to safety identified a major hazard and averted a potential mishap.



## AM1 MHAYNARD DIONIDO

While performing a thorough quality assurance inspection prior to flight for Liberty 603, AM1 Mhaynard Dionido discovered a large crack on the forward starboard side of the arresting hook stinger assembly. Recognizing this as a downing discrepancy, AM1 Dionido notified the flight deck coordinator along with maintenance control and the faulty component was replaced. His quick efforts and keen attention to detail prevented a potentially catastrophic failure of the arresting gear system, preserving aircrew and aircraft safety.



## AT3 ELIJAH WALKER

While actively engaged in propeller guard duties onboard USS Ronald Regan (CVN 76), AT3 Elijah Walker noticed two jets man up and begin to taxi near the turning Liberty 602. As the second aircraft taxied, a hydraulic servicing unit (HSU) began to slide toward the spinning port propeller of 602. Utilizing superb operational risk management, he quickly assessed the situation and determined that he could safely intercept the HSU. He got down on one knee and successfully regained positive control of the gear. His quick reaction prevented possible injury to his shipmates and damage to 602. AT3 Walker's attention to detail, initiative, and dedication to safety identified a major hazard and averted a potential mishap.

